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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,100	02/27/2004	Douglas S. Lacy	030048107US	7692

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EXAMINER

HOLZEN, STEPHEN A

ART UNIT	PAPER NUMBER
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3644

DATE MAILED: 09/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/789,100

Applicant(s)

LACY ET AL.

Examiner

Stephen A. Holzen

Art Unit

3644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2005 and 11 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-38, 40-44 and 46-50 is/are pending in the application.
- 4a) Of the above claim(s) 30, 40, 46 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29, 31-38, 41-44 and 47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/10/05 & 4/11/05 46/20/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to the rejected claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 29,32-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Dockter et al (6,622,974). Dockter et al disclose an aircraft having an airfoil construction that allows a user to optimize chord lengths at different span wise locations. Dockter et al teach this capability through expandable cord bladders that are utilized to change the chord of the geometric morphing wing.

- a. See Col. 3, lines 13-16
- b. See Col. 3, lines 65-67
- c. See Col. 4, lines 17-21
- d. See Col. 4, lines 61-65

Dockter et al teach "deployed" and "retracted" positions of the inflatable airfoils since the cord lengths are able to change (lengthen and shorten) from root to tip. (See Col. 4, lines 62-65).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 31,41-44,47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dockter et al. Dockter et al do not specifically teach two-tapered portion, however they do teach that the surfaces and chord lengths along span are adjustable to optimize flight through various flight conditions. It would have been obvious to use a double tapered shape of the airfoils where aerodynamic characteristics dictate that such a shape will provide an optimal aerodynamics.

- e. See Col. 3, line 3
- f. See Col. 3, lines 41-44
- g. See Col. 3, lines 59-63
- h. See Col. 4, lines 55-59

Dockter et al teach "deployed" and "retracted" positions of the inflatable airfoils since the cord lengths are able to change (lengthen and shorten) from root to tip. (See Col. 4, lines 62-65).

6. Claims 29,31-36, 41-44, 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Morphing Aerostructures – An Overview" from www.crgrp.net (CRGRP). The applicant should appreciate that the website was posted on 7/11/2003 which is before the earliest effective filing date of the current application.

CRGRP teaches that the military is searching and for new capabilities in military vehicle systems and that they (CRGRP) has created a new technologies that allows for drastic wing shape changes during flight.

"Through morphing, the aerodynamics of the aircraft can be adapted top optimize performance in each segment by changes areas such as the chamber of the airfoil and the twist distribution along the wing."

"The wing can be adapted to different mission segments, such as cruise, loitering, and high-speed maneuvering by seeping, twisting and changing its span, area and airfoil shape"

"The ability to substantially change a wing's shape seamlessly in flight through the use of CRG's SMP technology with produce aircraft that can fly both fast and slowly, with optimal efficiently at every speed."

It would have been obvious in light of the illustrations and disclosures on the website (see Figure in the top right of page 3/9, that illustrates an aircraft morphing shape) to alter the chord lengths at a plurality of span-wise locations as taught by CRGRP since "morphing, adaptable system increase the usefulness and capabilities of" aircraft. Further it would have been obvious in light of the CRGRP's teachings to morph

the wing to have two tapered portions based on selected design conditions. Please see pages 3-8 of the attached Non-Patent Literature, which was posted on www.crgroup.net on 7/11/2003.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen A. Holzen whose telephone number is 571-272-6903. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 571-272-7045. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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